

Common Name: **Elkhorn coral**

Scientific name: *Acropora palmata*

Area of Concern: Caribbean basin

Year First Listed as a "Species of Concern": 1999

Brief Species Description:

This is a large branching coral with exceptionally thick and sturdy antler-like branches. Elkhorn coral was formerly the dominant species in shallow water (1-5 m depth) throughout the Caribbean and on the Florida Reef Tract, forming extensive, densely aggregated thickets (stands) in areas of heavy surf. Colonies are fast growing: branches increase in length by 5-10 cm per year, with colonies reaching their maximum size in approximately 10-12 years. Over the last 10,000 years this is one of the three most important Caribbean corals contributing to reef growth and development and providing essential fishery habitat.



Elkhorn coral is found on coral reefs in southern Florida and the Bahamas, and throughout the Caribbean. Its northern limit is Biscayne National Park, Florida, and it extends south to Venezuela; it is not found in Bermuda. Colonies prefer exposed reef crest and fore reef environments in depths of less than 6 meters, although isolated corals may occur to 20 meters. Once found in continuous stands that extended along the front side of most coral reefs, the characteristic "*Acropora palmata* zone" supported a diverse assemblage of other invertebrates and fish. These zones have been largely transformed into rubble fields with few, isolated living colonies.

Rationale for "Species of Concern" Listing:

Factors for decline:

Since 1980, populations have collapsed throughout their range from disease outbreaks, with losses compounded locally by hurricanes, increased predation, bleaching, and other factors. This species is also particularly susceptible to damage from sedimentation. In areas where this loss has been quantified, estimates are in the range of 90-95% reduction in abundance since 1980. However, additional drastic reductions (e.g. 75-90%) were recently observed in some areas such as the Florida Keys in 1998 due to bleaching and hurricane damage.

Demographic and Diversity Concerns:

The dominant mode of reproduction for Elkhorn coral is asexual with new colonies forming when branches are broken off of a colony and reattach to the substrate. This life history trait allows rapid population recovery from physical disturbances such as storms. However, it makes recovery from disease or bleaching episodes (where entire colonies or even entire stands are killed) very difficult. Sexual reproduction is via broadcast spawning of gametes into the water column once each year in August or September. Individual colonies are both male and female (simultaneous hermaphrodites) and will release millions of gametes. The coral larvae (planula) live in the plankton for several days until finding a suitable area to settle; unfortunately, very few larvae survive to settle and metamorphose into new colonies. The preponderance of asexual reproduction in this species raises the possibility that genetic diversity in the remnant populations may be very low.

These uncertainties as to recruitment/recovery potential and genetic status are the bases for increased demographic concerns for this species.

Status Reviews/Research Completed or Underway:

A major first step toward a formal status review was a Caribbean-wide workshop sponsored by NMFS and held in Miami in April 2002. *Acropora* spp. researchers were gathered from throughout the Caribbean region to document population status, trends, threats, and information needs (Bruckner AW. 2002. Proceedings of the Caribbean Acropora Workshop: potential application of the US Endangered Species Act as a conservation strategy. NOAA Technical Memorandum NMFS-OPR-24, Silver Spring, MD 199 pp). Ongoing research efforts include the documentation of population genetic status and recruitment/recovery monitoring in the Florida Keys and USVI.

For further information on this Species of Concern, or on the Species of Concern Program in general, please contact Ms. Marta Nammack, NMFS, Office of Protected Resources, 1315 East West Highway, Silver Spring, MD 20910, (301) 713-1401, Marta.Nammack@noaa.gov or Dr. Margaret Miller, NMFS Southeast Science Center, 75 Virginia Beach Dr. Miami FL 33149 (305)361-4561 margaret.w.miller@noaa.gov, or Jennifer Jacukiewicz, NMFS, Southeast Region, Protected Resources Division, 9721 Executive Center Drive N., St. Petersburg, FL 33702, (727)570-5312, Jennifer.Jacukiewicz@noaa.gov.